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New claims

Name

Amendments to the Claims:

Please amend claims 1-14 as follows. The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended). A digital modulation signal generating apparatus, comprising:

a band signal generator which generates a base band signal;

a carrier signal generator which generates a carrier signal;

an orthogonal modulator ~~for generating~~ which generates a digital modulation signal of a predetermined channel that corresponds to a frequency of the carrier signal upon receipt of ~~a~~ the base band signal ~~outputted from~~ generated by the base band signal generator and ~~a~~ the carrier signal ~~outputted from~~ generated by the carrier signal generator;

an amplifier ~~for amplifying~~ which amplifies ~~a~~ the digital modulation signal generated by the orthogonal modulator;

an output terminal ~~for outputting~~ which outputs ~~a~~ the digital modulation signal amplified by the amplifier;

a first level varying ~~means~~ member provided between the base band signal generator and the orthogonal modulator, ~~for varying~~ which varies a level of the base band signal, and ~~inputting~~ inputs the base band signal which has had the level varied to the orthogonal modulator;

a second level varying ~~means~~ member provided between the amplifier and the output terminal, ~~for attenuation varying~~ which attenuates and varies a level of an output signal ~~of~~ output from the amplifier, and ~~outputting~~ outputs the output signal which has had the level attenuated and varied from the output terminal;

output level specifying ~~means for specifying~~ member which specifies an output level value of ~~a~~ the digital modulation signal ~~outputted~~ output from the output terminal;

a judgment ~~means for judging~~ section which judges whether or not ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by the output level specifying ~~means~~ member is higher than a predetermined value or a predetermined range; and

a level diagram switching ~~means for setting~~ section which sets the first level varying ~~means~~ member and the second level varying ~~means~~ member so that ~~a~~ the digital modulation signal ~~outputted~~ output from the output terminal is a predetermined attenuation quantity value which makes desired carrier leak characteristics compatible with desired mutual modulation

distortion characteristics, respectively, based on ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by the output level specifying means and ~~the~~ a judgment result caused by the judgment ~~means~~ member.

Claim 2 (Currently Amended). A digital modulation signal generating apparatus according to claim 1, ~~characterized in that~~ wherein said level diagram switching ~~means~~ member is adopted to switch a level diagram inside of the apparatus between a state in which carrier leak characteristics precedes mutual modulation distortion characteristics and a state in which mutual modulation distortion characteristics precedes carrier leak characteristics according to ~~an~~ the output level value of ~~a~~ the digital modulation signal ~~outputted~~ output from said output terminal specified by said output level specifying ~~means~~ member and ~~the~~ a judgment result of said judgment ~~means~~ member.

Claim 3 (Currently Amended). A digital modulation signal generating apparatus according to claim 2, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set an attenuation quantity of said first level varying ~~means~~ member to be small so that a level difference between ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel

~~outputted~~ output from said output terminal and a residual carrier is equal to or larger than a predetermined value in the case where ~~an~~ the output level value specified by said output level specifying ~~mean~~ member is lower than the predetermined value or predetermined range by said judgment ~~means~~ section, and to set an attenuation quantity of said second level varying ~~means~~ member so that ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel of ~~an~~ the output level value specified by said output level specifying ~~means~~ member is ~~outputted~~ output from said output terminal.

Claim 4 (Currently Amended). A digital modulation signal generating apparatus according to claim 2, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set an attenuation quantity of said first level varying ~~means~~ member to be small so that a level difference between ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel ~~outputted~~ output from said output terminal and a mutual modulation distortion is equal to or larger than a predetermined value ~~in the case where~~ when it is judged that an output level value specified by said output level specifying ~~mean~~ member is higher than ~~the~~ a predetermined value or a predetermined range by said judgment ~~means~~ section, and to set an attenuation quantity

of said second level varying ~~means~~ member so that ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel of ~~an~~ the output level value specified by said output level specifying ~~means~~ member is ~~outputted~~ output from said output terminal.

Claim 5 (Currently Amended). A digital modulation signal generating apparatus according to claim 2, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set said first level varying ~~means~~ member so that a level difference between ~~a~~ the digital modulation signal ~~outputted~~ output from said output terminal and a residual carrier contained therein is equal to or larger than a predetermined value or range by said judgment section when it is judged that an output level value specified by said output level specifying ~~means~~ member is lower than the predetermined value or predetermined range; to set said second level varying ~~means~~ member so that ~~a~~ the digital modulation signal of said specified level value is ~~outputted~~ output from said output terminal; to set said first level varying ~~means~~ member so that a level of the digital modulation signal ~~outputted~~ output from said output terminal and a level of the mutual modulation distortion contained therein are equal to or larger than a predetermined value when it is judged that said specified level value is higher than said predetermined value or

said predetermined range; and to set said second level varying means so that a digital modulation signal of said specified level value is ~~outputted~~ output from said output terminal.

Claim 6 (Currently Amended). A digital modulation signal generating apparatus according to claim 1, ~~characterized in that~~ wherein said digital modulation signal generating apparatus further comprises a computation ~~means for computing~~ section which computes a predetermined attenuation quantity value for said first level varying ~~means~~ member and said second level varying ~~means~~ member set by said level diagram switching ~~means~~ section based on ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by at least said output level specifying ~~means~~ member and the judgment result caused by said judgment ~~means~~ section.

Claim 7 (Currently Amended). A digital modulation signal generating apparatus according to claim 1, ~~characterized in that~~ wherein said digital modulation signal generating apparatus further comprises a storage ~~means for storing~~ section which stores in advance in a table format a predetermined attenuation quantity value for the first level varying ~~means~~ member and the

second level varying ~~means~~ member set by said level diagram switching ~~means~~ section.

Claim 8 (Currently Amended). A digital signal generating apparatus comprising:

a base band signal generator which generates a base band signal;

a carrier signal generator which generates a carrier signal;

an orthogonal modulator ~~for generating~~ which generates a digital modulation signal of a predetermined channel that corresponds to a frequency of the carrier signal upon the receipt of ~~a~~ the base band signal ~~outputted from~~ generated by the base band signal generator and ~~a~~ the carrier signal ~~outputted from~~ generated by the carrier signal generator;

an amplifier ~~for amplifying~~ which amplifies ~~a~~ the digital modulation signal generated by the orthogonal modulator;

an output terminal ~~for outputting~~ which outputs ~~a~~ the digital modulation signal amplified by the amplifier;

a first level varying ~~means~~ member provided between the base band signal generator and the orthogonal modulator, ~~for varying~~ which varies a level of the base band signal, and ~~inputting~~ inputs the base band signal which has had the level varied to the orthogonal modulator;

a second level varying ~~means~~ member provided between the orthogonal modulator and the amplifier, ~~for attenuation varying~~ which attenuates and varies a level of ~~a~~ the digital modulation signal outputted from the orthogonal modulator, and ~~inputting~~ inputs the digital modulation signal which has had the level attenuated and varied to the amplifier;

a third level varying ~~means~~ member provided between the amplifier and the output terminal, ~~for attenuation varying~~ which attenuated and varied a level of an output signal ~~of~~ output from the amplifier, and ~~outputting~~ outputs the output signal which has had the level attenuated and varied from the output terminal;

an output level specifying ~~means for specifying~~ member which specifies an output level value of ~~a~~ the digital modulation signal ~~outputted~~ output from the output terminal;

a judgment ~~means for judging~~ section which judges whether or not ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by the output level specifying ~~means~~ member is higher than a predetermined value or a predetermined range; and

a level diagram switching ~~means for setting~~ section which sets the first level varying ~~means~~ member, said second level varying ~~means~~ member, and said third level varying ~~means~~ member to a predetermined attenuation value, respectively, so that ~~a~~ the digital modulation signal ~~outputted~~ output from the output

terminal makes desired carrier leak characteristics compatible with desired mutual modulation distortion characteristics based on ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by the output level specifying ~~means~~ member and ~~the~~ a judgment result caused by the judgment ~~means~~ section.

Claim 9 (Currently Amended). A digital modulation signal generating apparatus according to claim 8, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to switch a level diagram inside of the apparatus between a state in which carrier leak characteristics precedes mutual modulation distortion characteristics and a state in which mutual modulation distortion characteristics precedes carrier leak characteristics according to ~~an~~ the output level value of ~~a~~ the digital modulation signal ~~outputted~~ output from said output terminal specified by said output level specifying ~~means~~ section and the judgment result of said judgment ~~means~~ section.

Claim 10 (Currently Amended). A digital modulation signal generating apparatus according to claim 8, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set an attenuation quantity of said first level varying ~~means~~ member to be small so that a level difference between ~~a~~ the

digital modulation signal of ~~a~~ the predetermined channel ~~outputted~~ output from said output terminal and a residual carrier is equal to or larger than a predetermined value ~~in the case where~~ when it is judged that ~~an~~ the output level value specified by said output level specifying ~~means~~ member is lower than the predetermined value or the predetermined range by said judgment ~~means~~ section, to set an attenuation quantity of said second level varying ~~means~~ member to be large so that a level difference between ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel ~~outputted~~ output from said output terminal and a residual carrier is equal to or larger than a predetermined value, and to set an attenuation quantity of said third level varying ~~means~~ member so that ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel of the output level value specified by said output level specifying ~~means~~ section is ~~outputted~~ output from said output terminal.

Claim 11 (Currently Amended). A digital modulation signal generating apparatus according to claim 8, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set an attenuation quantity of said first level varying ~~means~~ member to be large so that a level difference between ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel

~~outputted~~ output from said output terminal and a mutual modulation distortion is equal to or larger than a predetermined value ~~in the case where~~ when it is judged that an output level value specified by said output level specifying ~~mean~~ member is higher than the predetermined value or the predetermined range by said judgment ~~means~~ section, to set an attenuation quantity of said second level varying ~~means~~ member to be large so that a level difference between ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel ~~outputted~~ output from said output terminal and a mutual modulation distortion is equal to or larger than a predetermined value, and to set an attenuation quantity of said third level varying ~~means~~ member so that ~~a~~ the digital modulation signal of ~~a~~ the predetermined channel of the output level value specified by said output level specifying ~~means~~ member is ~~outputted~~ output from said output terminal.

Claim 12 (Currently Amended). A digital modulation signal generating apparatus according to claim 8, ~~characterized in that~~ wherein said level diagram switching ~~means~~ section is adopted to set said first level varying ~~means~~ section and said second level varying ~~means~~ member so that a level difference between ~~a~~ the digital modulation signal ~~outputted~~ output from said output terminal and a mutual modulation distortion is equal to or larger

member.

than a predetermined value when it is judged that an output level value specified by said output level specifying ~~means~~ member is lower than the predetermined value or the predetermined range; to set said third level varying ~~means~~ member so that ~~a~~ the digital modulation signal of said specified level value is ~~outputted~~ output from said output terminal; to set said first level varying ~~means~~ member and said second level varying ~~means~~ member so that a level difference between ~~a~~ the digital modulation signal ~~outputted~~ output from said output terminal and the mutual modulation distortion contained therein is equal to or larger than a predetermined value when it is judged that said specified level value is higher than said predetermined value or said predetermined range; and to set said third level varying ~~means~~ member so that ~~a~~ the digital modulation signal of said specified level value is ~~outputted~~ output from said output terminal.

Claim 13 (Currently Amended). A digital modulation signal generating apparatus according to claim 8, ~~characterized in that~~ wherein said digital modulation signal generating apparatus further comprises a computation ~~means for computing~~ section which computes a predetermined attenuation quantity value for said first level varying ~~means~~ member, said second level varying ~~means~~ member, and said third level varying ~~means~~ member set by said

level diagram switching ~~means~~ section based on ~~an~~ the output level value of ~~a~~ the digital modulation signal specified by at least said output level specifying ~~means~~ member and the judgment result caused by said judgment means. section.

Claim 14 (Currently Amended). A digital modulation signal generating apparatus according to claim ~~1~~ 8, ~~characterized in that~~ wherein said digital modulation signal generating apparatus further comprises a storage ~~means for storing~~ section which stores in advance in a table format a predetermined attenuation quantity value for the first level varying ~~means~~ member, the second level varying ~~means~~ member, and the third level varying ~~means~~ member set by said level diagram switching ~~means~~ section.